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GYMNOTHORAX GALETAE, A NEW MORAY EEL FROM THE ATLANTIC COAST OF PANAMA

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The collection of fishes which included this new species was taken by the author in 1962 at Galeta Island on the Atlantic Coast of Panama. The type locality is identical to that from which Rubinoff and Rubinoff (1962) reported several new Panamanian records of apodes.

The fish here described as new is immature and unique. It is nevertheless described because of the proposed construction of a sea-level canal across the Middle-American Isthmus. The removal of this land barrier to interoceanic dispersal places an obligation upon biologists for a thorough pre-canal recording of the populations and distributions of marine fishes in this still relatively poorly studied region.

Family MURAENIDAE

Genus GYMNOTHORAX Bloch 1795

GYMNOTHORAX GALETAE, new species

Figure 1

Type locality: Rubinoff Station No. 79, Galeta Island, 9°24′20″N 79°52′18″W Canal Zone, Atlantic Coast of Panama. Collected at a depth of less than 6 inches from the flat of reef, with "Pro-Noxfish" that was introduced to the seaward edge of the reef and which was rapidly dispersed over the reef by the flooding tide, 1300 hrs., 25 May 1962.

Measurements of the holotype (in mm): MCZ 44035, an immature fish. Total length 128, head and trunk 59.0, tail 69, head 16.5, snout 2.7, eye 1.7, depth at gill opening 6.1, depth at anus 5.1, cleft of mouth 6.6, length of gill opening 1.1, fleshy interorbital 2.0, snout to origin of dorsal fin 11.8, diameter of typical body spot 3.

Description: Body elongate, somewhat laterally compressed, this compression somewhat more pronounced posteriorly. Greatest body depth about 21 in total length. Head and trunk shorter than tail by about six-tenths of the length of the head. Head 7.75 in total length. Eye 9.7 in head, 1.6 in snout. Snout 6 in head. Cleft of mouth 2.5 in head, mouth closing completely, teeth all enclosed by lips. Fleshy interorbital 8.25 in head. Dorsal fin inserted well in advance of gill opening, distance from snout to dorsal insertion about 1.4 in head. Anal fin beginning immediately behind anus. Dorsal fin confluent with anal around tip of tail. No paired fins present. The anterior nostrils are simple tubes. The posterior nostrils have slightly raised rims and are above and slightly in advance of the margins of the eyes. There are two pores just anterior to and slightly above the gill slits. There are four pores along the margin of the upper jaw and five along the lower jaw. The total number of vertebrae, as determined by X-ray, is 158.

The terminology of the following description of the dentition corresponds to that of Ginsburg (1951). Upper "jaw teeth" include 4 anterior and 14 posterior teeth on the left side, with 9 anterior and 10 posterior teeth on the right side. The "premaxillary" has 3 enlarged canines, and there are 7 small conical "palatal teeth." The dentary has an outer row of 19 teeth on the left side, and 21 on the right. Anteriorly, 4 enlarged canines are present on each side medial to the outer dentary series.

Color description: The following color observations are made from Kodachrome II photographs which were taken immediately after the capture of the specimen. Head light orange-brown, without spots. Snout maroon, darker than rest of head (considerably darker than indicated in the Figure). Anteriormost spot above, and just posterior to origin of dorsal fin. Laterally, maroon-brown spots begin at the level of the gill slits and continue posteriorly with approximately equal density and size to the margin of the tail where the confluence of the dorsal and anal fin is pigmented light orange, a hue similar to that of the head. Between the pale orange of the head and tail, the background is a pale reddish brown. Thin striae of maroon pigment radiate from the dense circular lateral maroon spots. These lateral spots are generally quite discrete, with the margins of two adjacent spots only occasionally overlapping. The spots do not look as if they might merge to form a reticulated pattern with growth. Upon preservation the body spots have become brown and the orange color of the head and tip of the tail has changed to a pale reddish brown matching the rest of the body ground color, which has remained relatively unchanged.

Remarks: Gymnothorax galetae does not resemble the adult or immature stages of any other Atlantic species of *Gymnothorax*. It is readily distinguished from all other Atlantic species by its large maroon spots on a paler ground color. Immature specimens of *G. moringa* and *G. vicinus* are common inhabitants of reef interstices at Galeta Island. The possibility that the present species might be a color variant of these species has been considered but eliminated by a comparison of their total number of vertebrae: *ca.* 135 for *G. vicinus, ca.* 141 for *G. moringa,* and 158 in the type of *G. galetae.*

Due to the proximity of the type locality to the Panama Canal, Eastern Pacific members of the genus *Gymnothorax* were also examined for possible evidence of affinities to the new species. There are, however, no records of members of this genus entering brackish and fresh waters of the Panama Canal System (Hildebrand, 1938, and personal observation at draining of Gatun Locks in 1961). The color patterns of several Indo-Pacific species such as *G. isingteena* and *G. stellatus* superficially resemble the pattern of *G. galetae.* However, these can be readily distinguished by the continuation of their body spotting onto the head. The head of *G. galetae* is not spotted.

The relationships among the species of *Gymnothorax* are in general too poorly understood to further attempt to discuss the affinities of the new species, particularly in view of the limited material available.

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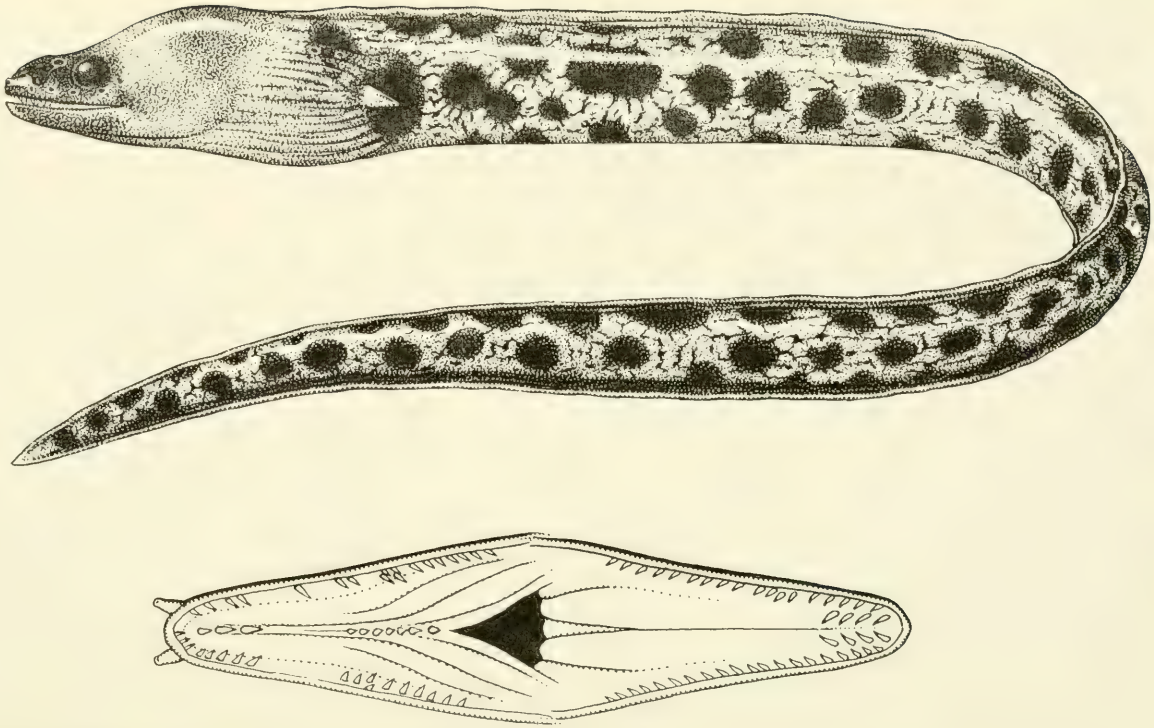

Figure 1. Lateral view, and open gape of *Gymnothorax galetae*. (Drawn by Nicholas Strekalovsky.)